Samuel Barnie

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RESEARCH

Interests	Contaminant Hydrology · Water Resources Engineering and Management · Water and Sanitation
Areas	Health, Toxicology and Mutagenesis · Water Science and Technology · Pollution · Biomedical Engineering · Mechanics of Materials · Renewable Energy, Sustainability and the Environment

RESEARCH SUMMARY

22	457	9	9	0.85	0%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 22 publications listed below, 2007–2025. Field-weighted impact is the mean over the 14 works scored for it; 1.00 is the world average for works of the same field, type and year. 0 of the 14 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer 2020–present
Department of Civil and Environmental Engineering, University of Cape Coast, Cape Coast, Ghana

PUBLICATIONS

Journal articles 21

1. Prince Kwesi Yeboah-danso, **Stephen Kwaw Awuah Samuel Barnie** (2025). Analysing the Coagulation and Flocculation Effects of Aloe Vera Gel: a Case Study on Wastewater from Garden Soil. *International Journal of Environment and Waste Management*.
2. Yikang Chen, Jinqi Zhu, Hui Wang, **Samuel Barnie**, Yankun Zhang, Jia Zhang, Jingjie Chang, Honghan Chen (2025). Mechanisms of synergistic/antagonistic effects of HA-Al(III) coprecipitates on Cr(VI) adsorption and reduction: Influence of C/M ratios. *Colloids and Surfaces A Physicochemical and Engineering Aspects*. https://doi.org/10.1016/j.colsurfa.2025.137320
3. Hui Wang, Xueying Gong, Yankun Zhang, Yankun Zhang, Fengping Liu, Jia Zhang, Ying yuan, **Barnie Samuel**, Wenbing Tan, Beidou Xi, Honghan Chen (2024). Crucial role of humic substance type in Cr(VI) reduction by humic substance-Fe(III) coprecipitates but not in adsorption. *Environmental Pollution*. https://doi.org/10.1016/j.envpol.2024.125057
4. Albert Ebo Duncan, Christian Adokoh, Martha Osei-Marfo, **Samuel Barnie**, Aboagye George Sakyi, Josephe Adjei (2023). Analysis and risk assessment of pharmaceutical residues in fish from three water bodies in Ghana. *Journal of Water and Health*. https://doi.org/10.2166/wh.2023.208
5. Albert Ebo Duncan, Sara Pennellini, **Samuel Barnie**, Martha Osei-Marfo, Samuel Nketia Boateng, Alessandra Bonoli (2023). Assessing the sustainable management of Coastal Wetlands in Developing Economies: A Case Study on the Iture-Abakam Natural Wetland in Cape Coast, Ghana. *Wetlands*. https://doi.org/10.1007/s13157-023-01743-x
6. Albert Ebo Duncan, **Samuel Barnie**, Martha Osei-Marfo, Samuel Nketia Boateng, George Acquaah, Gertrude Oboh (2023). Water Quality Monitoring in the Pra Basin of Ghana. *OALib*. https://doi.org/10.4236/oalib.1110173

7. Jingjie Chang, Jia Zhang, Hui Wang, Yunfei Bai, Yu Liu, Yanze Bi, Huanzhen Zhang, Honghan Chen, **Samuel Barnie**, Haijiao Xie (2022). Cr(VI) adsorption and reduction by magnetite-humic acid adsorption complexes under mildly acidic conditions: Synergistic/antagonistic mechanism and multi-step reaction model. *Chemical Engineering Journal*. https://doi.org/10.1016/j.cej.2022.138648
8. Fang Yuan, Jia Zhang, Jian Chen, Honghan Chen, **Samuel Barnie** (2022). In Situ Pumping–Injection Remediation of Strong Acid–High Salt Groundwater: Displacement–Neutralization Mechanism and Influence of Pore Blocking. *Water*. https://doi.org/10.3390/w14172720
9. Martha Osei-Marfo, Albert Ebo Duncan, **Samuel Barnie**, Sampson Nyame Owusu, Esi Awuah, Nanne de Vries (2022). Institutional Involvement and Collaboration in Disseminating Biogas Technology in Ghana. *Journal of Energy*. https://doi.org/10.1155/2022/1165136
10. **Samuel Barnie**, Jia Zhang, Albert Ebo Duncan, Martha Osei-Marfo, Caspar Daniel Adenutsi, Honghan Chen (2022). The adsorption and reduction mechanism of Cr(VI) by kerogen with different degrees of geochemical alteration using a thermal simulation method. *Applied Geochemistry*. https://doi.org/10.1016/j.apgeochem.2022.105261
11. Peter Appiah Obeng, Eric Awere, Panin Asirifua Obeng, Michael Oteng-Peprah, **Samuel Barnie** (2022). Wind Speed Thresholds for Adjusting Conventional Design Criteria for the Ventilated Improved Pit Latrine without Compromising Odour Control. *Journal of Engineering Research and Reports*. https://doi.org/10.9734/jerr/2022/v23i12790
12. **Samuel Barnie**, Peter Appiah Obeng, Albert Ebo Duncan, Caspar Daniel Adenutsi, Lin Xu, Honghan Chen (2021). Mechanism and multi-step kinetic modelling of Cr(VI) adsorption, reduction and complexation by humic acid, humin and kerogen from different sources. *Environmental Science and Pollution Research*. https://doi.org/10.1007/s11356-021-13519-z
13. Kaidi Jiang, Jia Zhang, Zhihui Deng, **Samuel Barnie**, Jingjie Chang, Yawen Zou, Xiangyu Guan, Fei Liu, Honghan Chen (2021). Natural attenuation mechanism of hexavalent chromium in a wetland: Zoning characteristics of abiotic and biotic effects. *Environmental Pollution*. https://doi.org/10.1016/j.envpol.2021.117639
14. Minghai Wei, Wenting Li, Jie Tang, **Samuel Barnie**, Jia Zhang, Honghan Chen (2021). New insight into mechanism of Cr(VI) migration and transformation in typical soils of chromite ore processing residue (COPR) contaminated sites. *Environmental Earth Sciences*. https://doi.org/10.1007/s12665-021-09986-9
15. Lin Xu, **Jia Zhang**, Hui Zhang, Fei Liu, Honghan Chen (2021). New insight into the adsorption mechanism of PCP by humic substances with different degrees of humification in the presence of Cr(VI). *Chemosphere*. https://doi.org/10.1016/j.chemosphere.2021.131223
16. **Samuel Barnie** (2019). Mechanism and modeling of hexavalent chromium interaction with a typical black soil: the importance of the relationship between adsorption and reduction. *RSC advances*. https://pubs.rsc.org/ra/article-abstract/9/10/5582/620375
17. **Samuel Barnie** (2019). Molecular structure-reactivity correlations of humic acid and humin fractions from a typical black soil for hexavalent chromium reduction. *Science of the Total Environment*. https://www.sciencedirect.com/science/article/pii/S0048969718340488
18. **Samuel Barnie** (2018). A novel method of three-dimensional hetero-spectral correlation analysis for the fingerprint identification of humic acid functional groups for hexavalent chromium retention. *RSC advances*. https://pubs.rsc.org/ra/article-abstract/8/7/3522/582900
19. **Samuel Barnie** (2018). Reduction mechanism of hexavalent chromium by functional groups of undissolved humic acid and humin fractions of typical black soil from Northeast China. *Environmental Science and Pollution Research*. https://doi.org/10.1007/s11356-018-1878-5
20. **Samuel Barnie** (2018). The influence of pH, co-existing ions, ionic strength, and temperature on the adsorption and reduction of hexavalent chromium by undissolved humic acid. *Chemosphere*. https://www.sciencedirect.com/science/article/pii/S004565351831542X
21. **Samuel Barnie**, GK Anornu (2014). Determination of Shallow Groundwater Aquifer Geometry using Geo-Electrical Techniques in the Atankwidi Sub-Basin of the White Volta Basin. *Ghana. Journal of Environment and Earth Science*. https://www.academia.edu/download/107029267/14499-16808-1-PB.pdf

Conference papers 1

1. **Samuel Barnie** (2007). Settlement Erosion: A case study of the Sunyani Municipality. *First International Environmental Research, Technology and Policy (ERTEP) Conference*.